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# BULLETIN

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of the

## Chicago Herpetological Society

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Volume 36, Number 4  
April 2001





**BULLETIN OF THE CHICAGO HERPETOLOGICAL SOCIETY**  
**Volume 36, Number 4**  
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**Cover:** Gray treefrog (*Hyla versicolor*) tadpole from Will County, Illinois. Photograph by Michael Redmer.

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## Tips for Studio Photography of Tadpoles and Other Submerged Aquatic Amphibians and Reptiles

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Aquatic larval and adult amphibians, and many highly aquatic reptile species, make up a large portion of the world's known herpetofauna. These species spend much or all of their time submerged, so photographers who want to depict them in natural situations while they are in water have few options. The purpose of this article is to suggest some methods for photographing aquatic amphibians and reptiles under controlled situations.

### Option One: Photography in the Wild

Several manufacturers market waterproof camera systems. Although this kind of equipment is generally very expensive it has been used by marine photographers for years. Another (and less expensive) option is use of a high-quality, waterproof housing made to fit your 35 mm SLR camera system. Under some circumstances, "underwater" camera gear could certainly be useful for photographing submerged amphibians and reptiles in the wild. An excellent example of such photography was an essay on vernal pools published by *National Geographic Magazine* several years ago (Grall, 1999).

Another important consideration in photographing wild aquatic herps is the water quality and clarity you will find. A simple truth is that most ponds, streams or other freshwater ecosystems are usually far too silty to allow much light penetration. There are exceptions, including extremely clear water such as that found around the mouths of mineral springs or groundwater-fed bodies of water.

### Option Two: The Aquatic "Studio"

#### Equipment Considerations

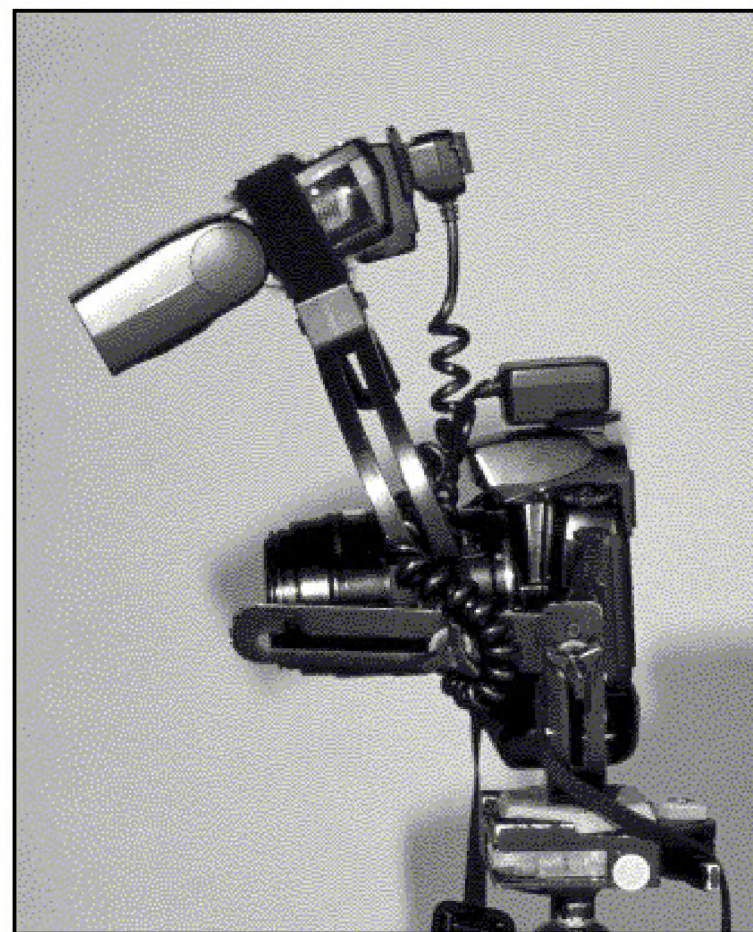
One alternative for obtaining a diverse collection of aquatic amphibian and reptiles images is to photograph captive individ-

uals held temporarily in containers with clear water and natural background. Studio portraiture of amphibians and reptiles is nothing new. The majority of stock photographs of these animals are probably taken in either studio settings or in semi-studio conditions set up near the place of capture. Photographing submerged captive animals is not much different than photographing nonsubmerged ones. The big difference in the former photographic studio situation is that you will be shooting through glass and/or water, and both situations have some unique problems.

After you have obtained salamander eggs, a tadpole, a clawed frog, a musk turtle, or some other aquatic species, you'll need little more photography equipment than that needed to make good studio portraits of terrestrial captive herps. The minimal equipment necessary includes: (1) a tripod; (2) a quality 35 mm SLR camera and macro lenses in the 50–105 mm range; (3) at least one (preferably two) off-camera flashes; and (4) electronic cords and "hot-shoe" attachments that will allow you to mount flashes off of the camera body. Most modern, electronically controlled SLR–flash systems operate with through the lens (TTL) flash metering. This feature is particularly helpful because the camera and flash communicate to ensure proper flash exposure in the final image. Also, if you do use more than one flash, you should consider purchasing or making a bracket upon which you can mount and position your flashes (Figures 1 and 2).



**Figure 1.** An adjustable "butterfly-style" bracket, used for mounting dual electronic flash units.



**Figure 2.** An "overhead-style" bracket, used for mounting electronic flash units over the lens, while at the same time allowing adjustments of the flash angle.



In addition to camera equipment, and accessories, you will need appropriate containers in which to hold water and animals, and in which you can set up artificial backgrounds. For most aquatic amphibians and many small, aquatic reptiles, I recommend a selection of aquaria in the 2-, 5- and 10-gallon sizes, and several standard sizes of rectangular “Rubbermaid®” type plastic shoe or sweater storage boxes (especially “flat” or low models). Larger species will require larger containers.

### Challenges

Capturing images of submerged animals can pose a number of challenges. Because they often move around, composition can be difficult. However, perhaps the most persistent problem is that of reflections caused by water or glass, and by particles suspended in the water. You will almost always use electronic flash as your primary light source in this kind of photography. A problem with this is that electronic flash tends to illuminate small reflective particles (either in the water or on the exterior glass), and causes them to appear on your film as small, but very bright spots or flecks. At best, these are just minor distractions in the image but at worst they can effectively ruin the photograph. An even more damaging (to the images) problem is that caused by larger reflections of white light from electronic flash units (see below). In either case, you will have no way of knowing whether this has happened until the processed film is returned, though you can anticipate these problems and attempt to correct them in advance. This will be discussed further below.

### Two Approaches

I use two approaches for caging and posing small aquatic animals for photography. These are “top-down” photography through water surface, and photography through the aquarium sides. Each technique necessitates different ways of coping with reflections.

#### Top-Down Photography.

“Top-down” photography involves a studio setup in which an animal that is held in shallow water within a flat/low-profile



**Figure 3.** Figure 3. A siren (*Siren* sp.) photographed using the “top-down” studio method described in the article. The studio setup consisted of a large, flat Rubbermaid® container with gravel and stones filled to depth of ca. 2 cm, and water filled to a depth of ca. 4 cm higher than the salamander’s back.

(rather than tall) enclosure such as a “Rubbermaid®” container or other plastic tray. Such containers are of sufficient size for studio setups of medium-sized aquatic turtles, or large amphibians like adult mudpuppies (*Necturus* sp.), *Siren* (Figure 3), or *Amphiuma*. Even larger species, such as snapping turtles can be similarly photographed in larger outdoor enclosures, such as shallow garden ponds (Figure 4).

The camera should be positioned high (usually a 35–50° angle) over the animal, and the resulting images would not be much different than those obtained if the subject was posed on a dry substrate. Much lower angles will often result in distorted-looking images caused by light refraction across the water surface. One or more flashes should be used to light the animal. The container is first filled to a depth of an inch or more of gravel, sand, flat rocks, wet leaves, or other background substrate (always thoroughly washed to minimize introduction of organic sediments), which then is covered with several additional inches (enough to completely submerge the animal) of dechlorinated water. The chosen substrate should sink. If the substrate floats to the surface, it can be covered with a large pane of glass placed over it (this often keeps the animal from trying to burrow into the substrate). The subject animal is then placed in the container and photographed when it is in an interesting pose.

To minimize reflections off the water surface, there are two steps you should take. First, you should use a polarizing filter to cut the whitish “hot-spots” caused when light from the flashes reflects directly into the lens, or to cut reflections caused by ambient light and light above the enclosure. Polarizing filters generally cost 1–2 stops of light, so you should experiment by taking some test exposures. Also, the flashes should be hand-held or positioned with a flash bracket so that their directions are at 35°, or greater angles to that of the direction of the camera lens. If your exposure is correct, you should end up with images in which the subject is sufficiently lighted, and the light that bounces off the water surface will be directed away from the lens.

The second type of reflection with which you will have to contend is reflection caused by dust or other small debris floating on the water surface. These reflections will appear in the final image as small white spots scattered over the water



**Figure 4.** A partially submerged alligator snapping turtle (*Macrochelys temminckii*), photographed in a shallow outdoor garden pond.



surface. To reduce them, you will need to remove floating debris before you begin photographing the animals. Aquarium nets are useful for removing larger objects, but the easiest way to remove smaller debris is to place a paper towel or coarse tissue paper flat on the surface of the water, then pull it across with one swipe. As the paper soaks up surface water, it also will attract and collect much of the floating debris, this allowing you to remove it from the area you will photograph.

#### *Photography Through Aquarium Glass*

The above technique allows good dorsal or dorsolateral portraits of aquatic species, but it isn't very useful for getting lateral or "eye-level" poses of small animals like tadpoles or salamander larvae. For those, you will need to use an aquarium, and compose your photographs through one of the glass sides. Simply set up a realistic background of submerged leaves, driftwood, filamentous algae, or aquatic plants, and add the animal or animals you wish to photograph. You may need to use a Plexiglas rod to gently coax or chase the animal to the place where you wish it posed. This may take a while, but with patience and practice you should be able to get some attractive compositions.

Photography through aquarium carries with it a whole suite of problems related to distracting reflections. At least five types of extraneous reflections can occur. You must anticipate them and eliminate them.

If you are serious about photographing aquatic amphibians and reptiles, you should consider purchasing several small aquaria to use just for this purpose. Because of their small sizes (which keeps the animals somewhat confined), aquaria in the 2-, 5- and 10-gallon sizes are the most useful for this kind of photography. Scratches on exterior glass will reflect light from the electronic flash, and will thus appear as distracting white lines or streaks in the final image. Shop around, and purchase only new aquaria in which the exterior glass is scratch-free, and store them carefully in areas where the glass will not be prone to scratching. Take great care not to scratch your photography aquaria when moving them around. If one pane of glass gets scratched, use the other side. If the wide sides are scratched, you can still use the narrow sides for very small animals (like tadpoles), but if four sides get scratched, retire the aquarium and use it for housing animals.

Dust, dirt or debris on the glass is also a frequent cause of distracting reflections in studio images of submerged animals. Always clean the exterior glass with glass-cleaner and a soft paper towel just prior to shooting.

Another type of reflection frequent to aquarium photography is caused when light from your flash(es) bounces off the glass and back into the camera lens. "Bounce-back" light is recorded on film as a large white reflection, and is caused when the direction of the flash gets close to perpendicular with the pane of glass. Fortunately, this problem can be easily eliminated by placing the flash(es) at angles of 35° or greater to the glass so that light reflected light will bounce away from the camera lens (Figure 5). Another option is to cover the aquarium top with glass and rest the flash (pointing down) on top of the aquarium. Some photographers who use aquarium

"studios" argue that this type of lighting appears more natural (because it is like sunlight shining down from above). I personally feel this type of lighting creates too many distracting shadows. If you do place a flash on the aquarium for top lighting, you should use an additional flash to light the animal through a side pane of glass. Directional shadows can still be achieved (but softened) by setting the side flash at approximately one stop less than correct exposure, but this can only be achieved in flash units which allow total manual in both single and multiple flash situations.

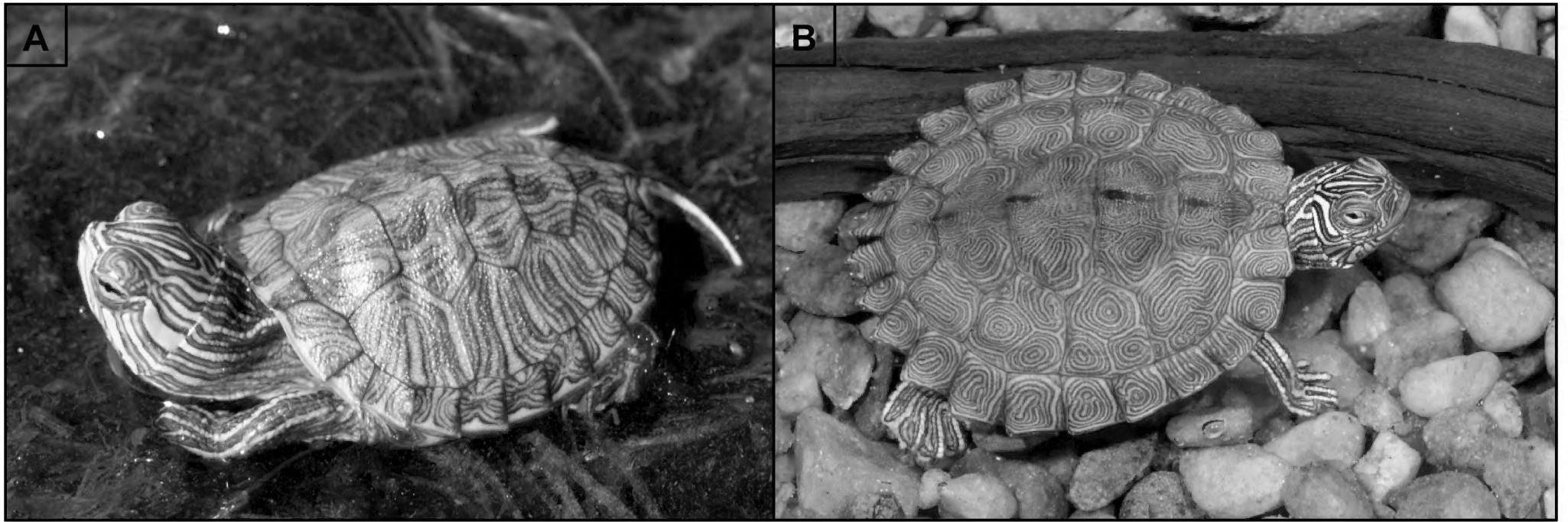
Another set of reflections that sometime ruin photos through aquaria walls are similar to those caused by "bounce-back" light described above. This type of reflections is, however, caused by light spots such as manufacturers lettering on the front of the camera lens, or by light colored objects behind the camera (such as the photographer's shirt, or light colored furniture). These reflections occur when flash bounces from the flash onto the glass, and then to the objects on or behind the camera. The objects are then lighted, and if they are reflected on the glass within the field of view, their reflection bounces into the lens and will show up in the final image. To minimize these reflections, you should carefully use black model paint to cover over any white lettering on the lens front, wear dark clothing, and suspend a black sheet or hood behind the camera when photographing. This hood acts as a wall and prevents reflections from light-toned objects behind you and the camera.

The final types of reflections common to aquarium photography are caused by particles or microscopic organisms suspended in the water, and by air bubbles adhered to hard surfaces (like inside glass). While they may not look distracting at the time you take your photographs, bubbles and suspended particles will almost always cause distracting light reflections to appear in the final image. When using live plants or other natural backgrounds, there is no way to eliminate all suspended matter, but you can minimize it by taking a few simple steps. First, you should use only clean, dechlorinated tap water instead of pond water (which is always loaded with suspended particles and organisms). Before you place them in your photography aquarium, rinse all leaves, live plants and



**Figure 5.** A photograph of a tadpole, taken through the front glass of an aquarium, and using electronic flash. Note that the reflection of the flash appears as a huge white spot above the tadpole. This indicates that the flash was mounted too low, and too close to parallel with the barrel of the lens.



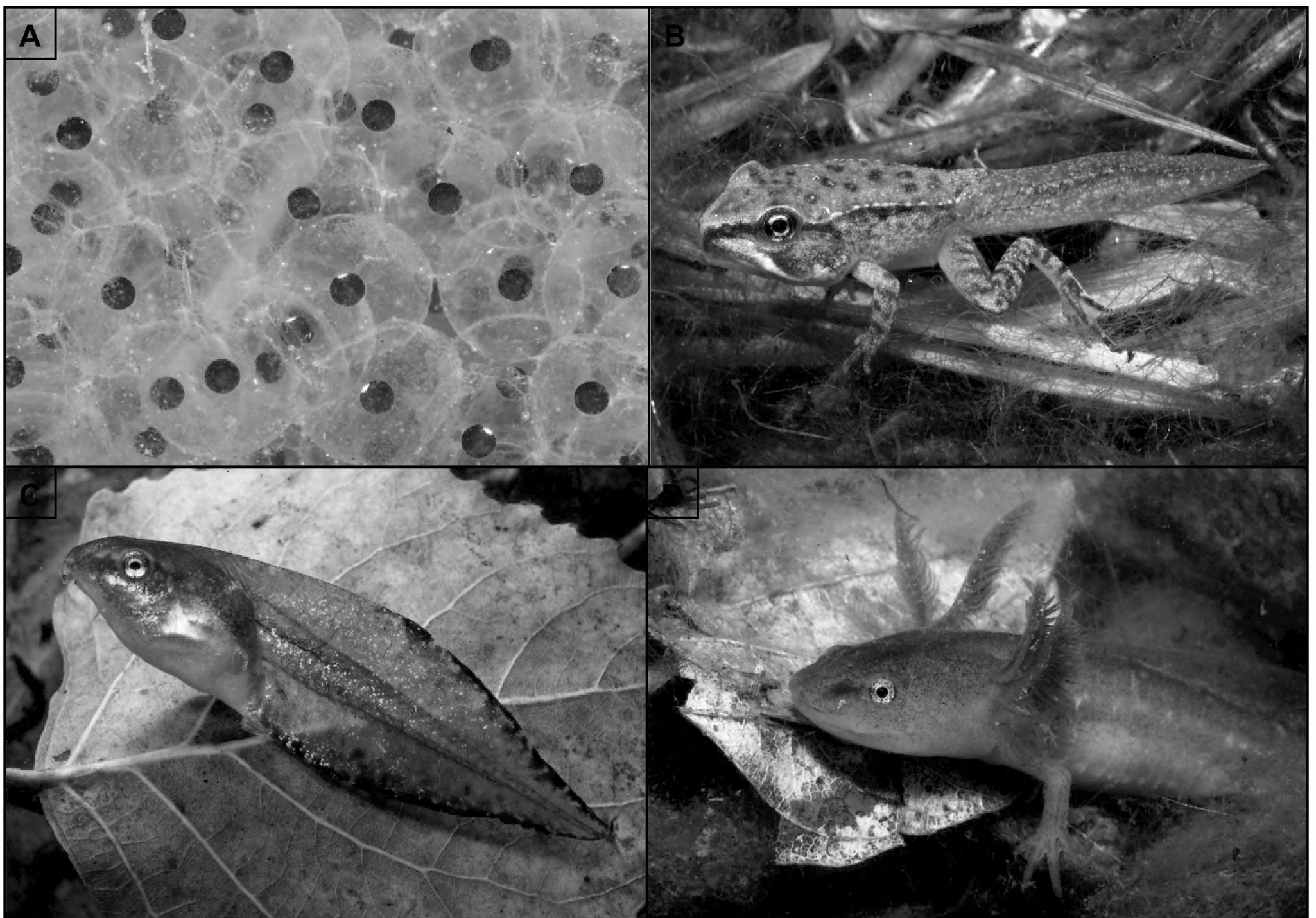


**Figure 6.** Aquatic turtles are often easiest to photograph from above, and while completely or partially submerged. Examples: (A) A hatchling red-eared slider (*Trachemys scripta*), completely submerged; (B) Cagle's map turtle (*Graptemys caglei*), completely submerged.

algae to remove additional particles. Set up studio aquaria several hours in advance of your photography session, as this allows many suspended particles to sink before you start. Advance set-up also allows time enough for most air bubbles to dissipate. If bubbles are still present just before your session, you will need to use a small aquarium glass cleaner (usually a

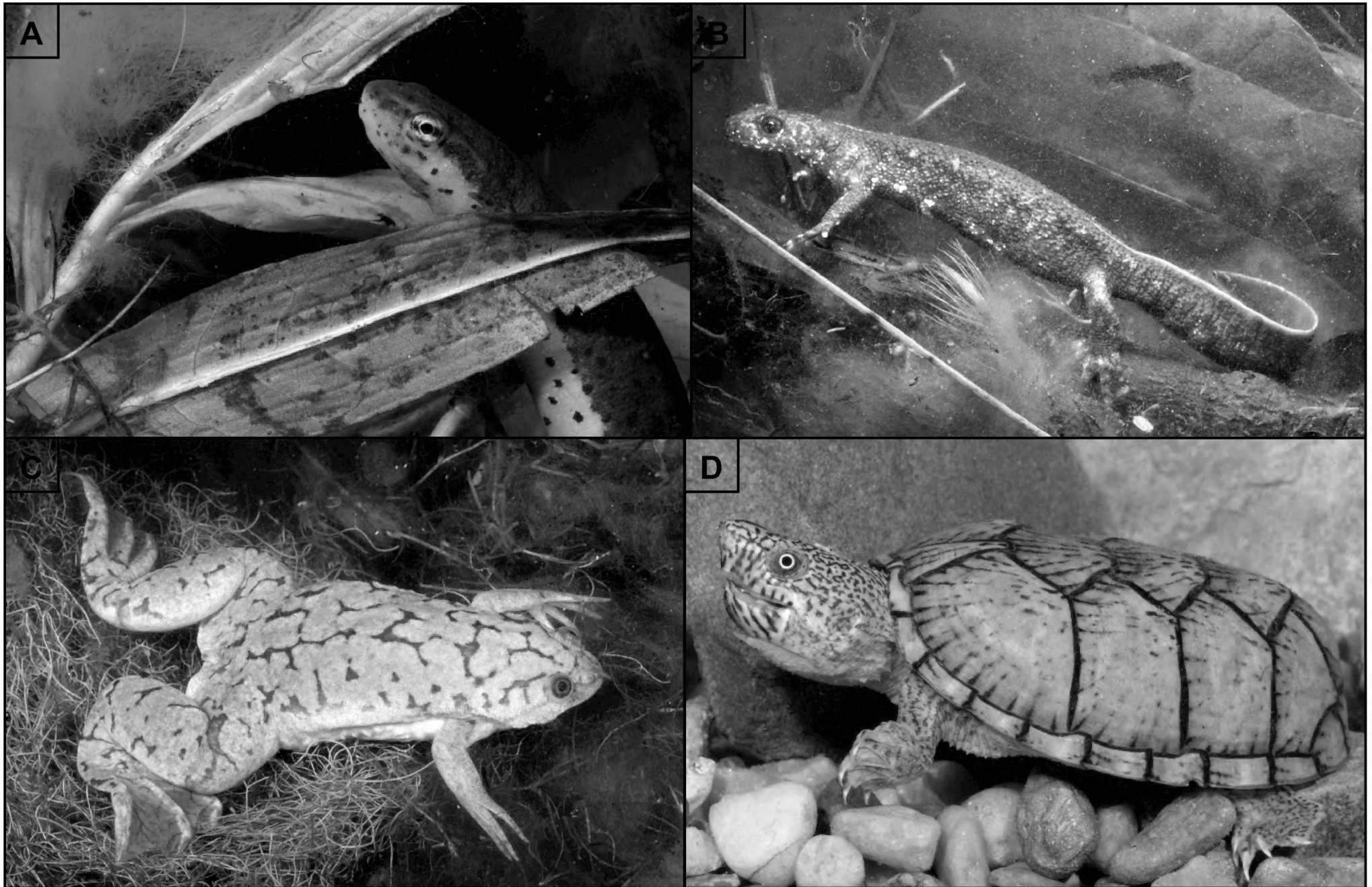
soft sponge mounted on the end of a stick) to knock the bubbles free of the glass.

Incidentally, the same “through-the-aquarium” technique works for photographing larger reptile species (such as alligator snapping turtles) in zoological parks or public aquariums,



**Figure 7.** The larval stages of amphibians are often ignored, but they can be just as interesting as the adults. One way to obtain close-up images of eggs and larval stages of amphibians is to photograph them through the side of an aquarium in which they are submerged. Examples: (A) Wood frog (*Rana sylvatica*) eggs; (B) metamorphosing wood frog (*R. sylvatica*) tadpole; (C) gray treefrog (*Hyla versicolor*) tadpole; (D) marbled salamander (*Ambystoma opacum*) larva.





**Figure 8.** The adults of some smaller species of amphibians and reptiles can also be photographed effectively through the sides of the aquarium in which they are submerged. Under such conditions the animals will often swim or display other normal behaviors, which adds an interesting element to the image. Examples: (A) central newt (*Notophthalmus viridescens*) lurking in a lushly planted aquarium; (B) Italian newt (*Triturus carnifax*); (C) clawed frog (*Xenopus* sp.); (D) flattened musk turtle (*Sternotherus depressus*).

but you will have no control over the animals' poses, and little control over their backgrounds or distracting reflections.

Photographing amphibians and reptiles requires practice, patience, and attention to detail. Photographing aquatic species requires even more of these attributes. With some work, you can build a collection of photographs unlike those most other herp photographers have. Indeed, despite the effort necessary to set up studio aquaria, you may find that some species are easier to photograph this way. A case in point is small aquatic turtles. For years, I preferred photographing these in "basking" situations, on logs, rocks, etc. Any photographer who has worked with aquatic turtles out of water knows that it can be difficult to coax them to extend limbs and head from the safety offered by their shells. Several years ago I realized that when they are placed gently in water, they more commonly extend limbs and head (Figure 6).

Photography can also lead to some unique and intimate opportunities for learning about aquatic species. Tadpoles have for years had the notorious (though unfair) reputation of being

extremely difficult to identify to species. Photographing salamander larvae and tadpoles has been an ongoing "self-assignment" or pastime of mine for several years now (Figure 7). While handling tadpoles in the close quarters necessary to produce good close-up images, I have learned that, with practice, tadpole identification is actually fairly easy. Indeed, while afield collecting amphibian larvae for photos, I have learned that the behaviors of some species in the wild can be distinct enough to identify them without handling. The colors and variation that amphibian larvae display can occasionally rival the colors and variety of some tropical fishes, and provide yet another reason to photograph them. The same can apply to other aquatic amphibians and reptiles (Figure 8).

Photography has long been an attractive "side" hobby for amateur herpetologists. Indeed, photography can become a whole new way to express interest and enthusiasm for amphibians and reptiles. If you are already interested in herp photography, working with tadpoles, aquatic salamander larvae, small turtles, etc., in their element can prove to be a great new approach to try!

#### Literature Cited

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## Recollections of Another Young Herpetologist

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Having read Robert Sprackland's article "To the Parents of a Young Herpetologist" [Bull. Chicago Herp. Soc. 36(2):29-30, 2001], I thought I'd recall a few of my own childhood herping experiences for other CHS members.

I was born in the UK, but came out to Australia at the ripe old age of five. I grew up in Sydney which in itself probably sealed my fate as a lifelong herper. You see the reptiles are so prolific there that you just can't miss them.

My induction as a herpetologist commenced at age five when pottering about the garden of our Lane Cove home. I found a three-foot bluetongue skink (*Tiliqua scincoides*) in a flower bed. My mum shrieked with fear as I grabbed it by its tail and flung the lizard into a cardboard box that was to become its short-term home. I'd seen the lizards on TV and for me this large skink was as much as status symbol as a pet. Three-foot? Now I hear a few readers already doubting my story. But may I assure you that I am telling the truth. You see the lizard had only three legs. One of the hind ones was missing. That's why the lizard had just sat there hissing when I found it. Basically it couldn't run away.

My next reptiles were a pair of long-necked tortoises I found in a creek a few hundred meters from our house. I fished them out and built an outdoor pen for them. They thrived and over the years I built up an impressive collection consisting of about 7 species — all caught in creeks around Sydney. Most weren't native to Sydney, so were obviously escapees from other people's collections or similar. At the time most pet shops sold these reptiles.

A few years later I was expelled from the Lane Cove Public School. The reason: Bringing my pets to school. You see, back then in the late 1960s and early 1970s reptiles were regarded as "creepy" and the official attitude towards them was that people should have nothing to do with them. My parents even took me to a psychologist to see if I was "normal." After all, wanting to keep reptiles as pets was anything but normal. After shelling out a small fortune, the psychologist told my mum, "He'll grow out of it — it's just a passing fad."

Thirty years later, the fad hasn't passed.

My next primary school (Greenwich) had a more benevolent attitude towards me and my pets. In fact they even asked me to do lectures on them for the other kids. I recall one time that I stood there taking snakes and lizards out of bags and trying to tell the kids what was what. It was one of those humid hot summer's days in Sydney when most school kids are more content with sleeping at their desks rather than learning about anything. However, the class suddenly perked up

when a carpet snake started writhing and then sprayed all its urine all over the kids sitting at the front of the class. Six months later when I did my next lecture to the class, no one wanted to sit at the front.

The highlight this time was a Krefft's Tortoise (*Emydura krefftii*) that piddled all over the floor of the class. Another time I was called in to give a talk to a kindergarten. Pandemonium struck when a previously docile nine-foot carpet snake decided to take out a toddler by striking at his head and then trying to coil around his body. No harm ensued, but it was a stark reminder to have supervision when handling "harmless" pythons with small kids.

For Rob Sprackland in America, his interest in herps came through herp books. For me it was the opposite. The books came after the live animals. When I was a youth, the only definitive book available here was Worrell's *Reptiles of Australia*. It took what seemed to be a lifetime for me to save up the \$12 I needed to buy my very own copy of the book. But it didn't take me anywhere near as long to memorize the book's entire contents. Twenty years later, the book has long since been superseded by the likes of Cogger's definitive book (several editions) and others, and most people who have entered the field of herpetology since the mid 1970s would probably have no concept of how significant Worrell's book was to herpetology here in Australia at the time.

By the time I was at high school in my pre-teens, my hobby as a herpetologist was immutable. I'd already amassed a sizeable collection of snakes, lizards and tortoises and spent every waking hour working out how to get even more. In those days you didn't need permits to catch and keep these animals and so for an Aussie herper, life was in that respect much easier.

In my first year at North Sydney Boys High School I came a cropper with some classmates after they found out that I was getting rats and mice from the school labs to feed to my snakes. I was branded "Rat-killer" and taunted wherever I went.

A year later things had changed. Those same kids who were teasing me a year earlier were now addicted. They too were hooked into keeping reptiles as pets. In fact many were effectively employed by me to capture feed skinks for my ever-growing collection of small elapids. Those snakes don't eat mice and so the only food source for them was the smaller lizards (referred to here as "feed skinks"). They are found in almost every house and garden in Australia, but when you start taxing your own yard for these lizards, it doesn't take long to effectively exterminate them within a decent radius of where you live. With each snake eating an average of three per week



and me having thirty odd at any time, I needed about ninety feed skinks a week just to keep my collection going. It wasn't feasible for me to go looking for these lizards so instead I started doing contra-deals for these lizards. Using my legendary lizard finding dog, I'd travel far and wide on weekends in search of Cunningham's skinks (*Egernia cunninghami*) (at Oberon), blotched bluetongues (*Tiliqua nigrolutea*) (at Katoomba), land mullets (*Egernia major*) (At Niagra Park), water dragons (*Physignathus lesueurii*) (at Epping or Oxford Falls), Gippsland water dragons (*P. howitti*) (at Jamberoo), etc. I'd haul them to school and swap them for anywhere between 30 and 100 feed skinks per lizard and this was more than enough to keep my own collection afloat.

Every morning I'd come to school and meet the other kids who'd give me an average of two or three skinks each that they'd found in their yards or nearby the previous afternoon. The calico bank bags we put the lizards in were scored for free from the local banks. I started a school herpetology club and for a while it was the most popular club in the place. Lunch-time meetings would attract up to 100 students. However by the later years of high school things took a downward turn. Herpetologically anyway. There were several reasons for this. For many kids the novelty of keeping lizards and snakes wore off. They looked elsewhere for their entertainment. Many took to drugs. The big thing then was Mandrax (Mandies), as tablets, and later marijuana. Heroin and cocaine only moved into Sydney in a big way in the 1980s.

Then came the New South Wales National Parks and Wildlife Service (NPWS). They spelled the death knell to a booming interest in herpetology, not just among my fellow students, but also to students across my home state of New South Wales (NSW).

In 1974, the NPWS introduced a system whereby you needed a license to so much as look at a reptile in the bush and/or keep them. Because I had an interest in these creatures before then, I got a license at the relevant time and so, for a while was basically immune from any law-enforcement activity by the department. However for those who developed an interest in these creatures after June 1974, it was effectively impossible to get a license to keep them and thus most budding herpetologists were effectively dissuaded from pursuing their interest.

Those who ran the gauntlet and kept without a permit were invariably raided and lost all the herps they had. And yes, they'd soon be forcibly run out of the hobby by the NPWS. By the mid 1970s it became clear that not all who worked with the NPWS were kosher and that some officers were improperly raiding illegally and even legally held collections, seizing reptiles and then sending them overseas.

The details of these scams are in the *Smuggled* books (Hoser, 1993, 1996) so I won't repeat them here. However I will recall another couple of cases that are vaguely relevant to this account of my youth.

General knowledge of my "expertise" in reptiles had spread far and wide. What did this "expertise" actually consist of? In the eyes of everyone else it was merely an ability to find,

identify and capture a snake or lizard if asked to. Soon I had people in the neighborhood ringing me to remove an unwanted snake or lizard from their suburban back yard. I willingly obliged. After all, it sure beat spending days walking through the bush trying to find the same things. Soon I had the local NSW Police onto the same caper. People would call them wanting a snake removed from their house or garden and the police would then call me to do the job. As I was too young to have a driving license, it would be common for them to front up to my home and pick me up, before driving me in a police car to the house to pick up the snake. Nobody seemed to mind this arrangement. But there was another constant that soon became apparent.

The calls to remove snakes and lizards would always be when I wasn't home. Why? I think it had something to do with Murphy's law. At first my parents would tell the callers "He's out, can't help you." But I'd come home and want to kill my parents for not going to get the reptile themselves.

Like the time my Dad told me "Ray, about three hours ago, we got a call from a woman in Turramurra who had a big black and yellow snake in a tree in her yard, and I told her you were out." Yes, I'd just missed out on a diamond python (*Morelia spilota*), which back then was a highly sought snake. We'd have a household war for the next week! I then gave my parents a crash-course on snake identification and handling and made it clear that in the unlikely event that I wasn't home and a call came through, that they were to go get the reptiles.

They didn't like the idea, but they put up with it as it was probably better than another week of family dispute. Like the time a call came through for a lizard. As usual I wasn't home so my dad went off to get it. It turned out to be a six-foot male lace monitor (*Varanus varius*) in a tree in suburban Turramurra. In front of about a hundred people my dad climbed up a pine tree and grabbed the lizard. In turn the lizard slashed my dad's face with his tail and ripped his arms to shreds with his claws. Did I care? No. The main thing was that he got it home in one piece, so I was happy.

The snake-rescue activity came to a fairly abrupt end in the late 1970s after I got a call for a diamond python near where I lived in St. Ives. As usual I wasn't home, so my dad went and got it. It was beautiful eight and a half foot thing. As per my license requirements my dad had then called the NPWS to tell them of the new snake. I arrived home a few hours later to see my dad handing the snake over to a representative of the department. When I asked why we had to hand the snake over, I was told by the official not to argue. The official told me that they needed the snake "for research." It all sounded a bit suss to me, but I went along with the caper to save the peace.

When I recalled the incident to Ewe Peters, the herpetologist at Sydney's Taronga Zoo, he told me what he thought. That was that the snake was to be sent overseas illegally by the NPWS people. How did he know? He was one of the main ones doing it. Peters himself was in on the caper. He told me he was sending hundreds of herps out for the NPWS people. A few months later we had a near rerun of the previous inci-



dent. I was out releasing some surplus Cunningham's skinks (I bred them every year), when my dad got a phone call from a Mrs. Molinari of Terry Hills. My dad raced over to her house and plucked a seven-foot diamond python out of a lemon tree. This time he waited for me to come home to contact NPWS to tell them of the new snake. The next day Tony Alexander from NPWS fronted up and demanded that I hand over the snake. I refused. He threatened to have me charged with every offense known. In turn I threatened to go to the media with all that I knew about NPWS's improper activities. Alexander didn't get the snake, not then anyway, but the NPWS people later broke in and stole it.

However, the incident made one fact completely apparent. That was that the NPWS people were now (in the late 1970s) using "snake catchers" like myself as an easy and effective

source of reptiles to supply their overseas contacts. I wasn't going to be a party to this and so immediately made it known that I wouldn't rescue any more snakes from anywhere. A few weeks later we got yet another call from the local Pymble Police Station. The policeman said, "We're in a house here and there's a six-foot brown snake. Can you come and get it?"

I said "No."

I explained why I was no longer collecting snakes from houses. The policeman then shouted away from the phone to his off-sider, "He's not coming. Shoot it!"

I heard a loud bang.

And that just about summed up the official attitude to snakes and lizards in Australia. "The only good reptile is a dead one — that is unless you can make a buck out of it."

#### Literature Cited

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*Bull. Chicago Herp. Soc.* 36(4):80-82, 2001

**Book Review: *Tadpoles: The Biology of Anuran Larvae*  
edited by Roy W. McDiarmid and Ronald Altig  
1999. University of Chicago Press, Chicago and London. xiv + 444 pp.  
Softbound (ISBN 0-226-55762-6) \$40; Hardbound (ISBN 0-226-55763-4) \$70**

**Michael Redmer  
456 Kilkenny Court  
Carol Stream, IL 60188**

In April 1995, near Horseshoe Lake in southern Illinois, I first had the pleasure of meeting Dr. Ronn Altig. Long regarded as one of the world's experts on larval amphibians, Ronn had traveled to Illinois from Mississippi State University to collect and photograph tadpoles of eastern spadefoot toads (*Scaphiopus holbrookii*) and Illinois chorus frogs (*Pseudacris streckeri*). Spadefoot tadpoles soon in hand, we drove 50 miles north to try to secure tadpoles of the crayfish frog (*Rana areolata*) from ponds at which I was studying that species. I was sure we would easily get the tadpoles, since females oviposited there just a month earlier, but we caught none. Instead we caught and released a number of tadpoles of other species. While I was embarrassed at the failure to get *R. areolata* tadpoles, I was also amazed (and amused) by the way Ronn used his index finger to quickly sort tadpoles in a pool of water held in his cupped hand. This was an important day in my development as an anuran biologist, because at the time I could usually identify tadpoles only to family and genus in the field, but had great difficulty identifying most to species. Using Ronn's example, I made it a personal goal to become proficient in field identification of tadpoles. Over the next few years, I was fortunate enough to make additional field trips in Illinois and the southeast with Ronn, and as a result am now much more confident of my ability to identify tadpoles in the field.

My personal reminiscence may seem a strange beginning to a book review. However, McDiarmid and Altig point out (Chapter 1: 2) that tadpoles have been "... studied much less than adult frogs." This is odd when one considers that tadpoles represent behavioral, ecological, evolutionary and morphological phases that are completely distinct from adult anurans. In the same paragraph (and again in Chapter 12: 295), the authors explain that a major impediment to research is that tadpoles have traditionally been thought too monotonously similar and difficult to identify. They are often ignored by field biologists, a situation that is mirrored by my above confession. In the past quarter century, or so, things have changed considerably. An example of this is the large (and still growing) literature based on studies using tadpoles as popular model organisms in experimental aquatic community ecology. Previously, tadpoles were long established as popular, if not classic, models for research in the field of vertebrate embryology/developmental biology. The editors make it clear that reviewing the latter well-covered area is not one of their goals. Instead, they "... urged authors to maintain an evolutionary viewpoint..." (preface: ix). The chapters (see below) are therefore best described as comparative reviews of evolutionary research topics.

As is common with many large reference texts, the editors



marshaled the help of other expert contributors, in this case 12 of them. The editors themselves contributed substantially to the text as sole co-authors of the introductory pages and four chapters, or as second, third or fourth authors in two chapters where contributors were lead authors. The 12 chapters are as follows:

Chapter 1. Introduction: The Tadpole Arena. R. W. McDiarmid and R. Altig.

Chapter 2. Research: Materials and Techniques. R. W. McDiarmid and R. Altig.

Chapter 3. Body Plan: Development and Morphology. R. W. McDiarmid and R. Altig.

Chapter 4. Architecture: Cranial and Axial Musculoskeleton. D. Cannatella.

Chapter 5. Anatomy: Viscera and Endocrines. B. Viertel and S. Richter.

Chapter 6. Integration: Nervous and Sensory Systems. M. J. Lannoo.

Chapter 7. Endotrophic Anurans: Development and Evolution. G. Thibaudeau and R. Altig.

Chapter 8. Physiology: Coping with the Environment. G. R. Ultsch, D. F. Bradford and J. Freda.

Chapter 9. Behavior: Interactions and Their Consequences. K. vS. Hoff, A. R. Blaustein, R. W. McDiarmid and R. Altig.

Chapter 10. Ecology: Resource Use, Competition, and Predation. R. A. Alford.

Chapter 11. The Anuran Tadpole: Evolution and Maintenance. R. N. Harris.

Chapter 12. Diversity: Familial and Generic characterizations. R. Altig and R. W. McDiarmid.

Most of the chapter titles are probably descriptive enough to illustrate the depth and scope of this project. Several chapters are worth additional comment only for clarification. Chapter 1 provides a historical review of tadpole study, as well as predictions and suggestion for future studies. In Chapter 2, among other research methods, the authors give a number of suggestions for maintaining and raising captive tadpoles. Chapter 7 struck me as creative (though very necessary) in that it examines topics effecting evolution of endotrophic-developing anurans. Many of these species exhibit direct development (i.e., they hatch from the egg as fully developed juvenile frogs, rather than tadpoles).

Chapter 12 also deserves special mention. This chapter is an extensive review of the characteristics of tadpoles in different anuran families and genera. Much of this chapter consists of an appendix-style list, which to some will appear monotonous. The editors point out (Chapter 12: 295) how researchers now recognize that (because tadpoles are often more conspicuous in aquatic habitats than are adults in surrounding habitats) sampling tadpoles is usually an efficient and viable means for assessing the anuran component of local biodiversity. However, there is considerable need to properly identify and describe tadpoles. In order to do so morphological and other terminology must be standardized. The strength of this chapter is that it applies a common terminology to all tadpoles at the generic and familial levels, and is the first such review to do so.

Tables and illustrations clearly and adequately augment material presented in text. The illustrations are all black and white, and range from photomicrographs and drawings of morphological structures or body shapes, to photographs of live tadpoles and dioramic representations of tadpole communities.

Throughout the text, a number of scientific terms are used to describe very specific aspects of tadpole biology. The editors wisely included an extensive glossary, a useful feature sometimes not provided in scientific review texts.

One of the most important aspects of large reference texts are the literature syntheses chapter authors provide to their assigned topics. Such syntheses often result in voluminous bibliographies. By the authors' count, approximately 2500 references are cited in this book. As expected, many of them deal specifically with tadpole biology. For those interested in tadpoles, the bibliography alone is worth the price of the book.

My criticisms of this book are minor. First, I am concerned about the durability of the paperbound review copy I was given. After I (many times) flipped through the book over only the past two months, some of the terminal pages already are in the early stages of coming unbound, and many are already well "dog-eared." Because I will undoubtedly refer to this book often, it may be necessary to purchase a clothbound copy in the future. It is unfortunate a sturdier hardback edition is not available. The paperbound price of this book is similar to that of Duellman and Trueb's (1986) *Biology of Amphibians* (\$39.95 paperbound) which is the most comparable contemporary reference I own. The latter is 226 pages longer, but is also more heavily illustrated, with slightly smaller pages, and uses somewhat larger fonts. Thus, these books are very similar in size. The smallish fonts of *Tadpoles* were no problem for me, but could be cumbersome to some "sight-challenged" readers. The cover and spine of this book are bright blue, making it one of the more conspicuous books on my shelf (it is doubtful it will ever be misplaced for very long!)

This book is intended to be a scholarly reference and synthesis of the current state of knowledge about tadpole biology. As should be expected, it is highly technical and tightly edited. Despite this, it should prove readable to anyone wishing to learn more about tadpoles. Indeed, the introductory parts by McDiarmid and Altig seem particularly laced with a welcome sense of humor uncommonly seen in comparable references. Kermit the Frog personally recollects his days as a tadpole, and each chapter is preceded by simple yet profound statements that summarize the topics about to be covered.

The editors modestly believe (Preface: ix) that as the first such reference on this topic, much of the current knowledge summarized in this book will soon become outdated by new information and future studies. This is a fate of most comprehensive reference books. For the past decade, amphibians have enjoyed an ironic surge in popularity brought about by publicity of regional population declines. It is indeed very likely that general interest in amphibians will continue to increase, and interest in amphibian larvae will surely increase in concert. How soon this definitive work becomes outdated is



not as important as the foundation it will lay. No matter the future advances in our knowledge of tadpoles, this book is destined to become a classic and “must-have” reference on a crucial topic of amphibian biology.

**Reviewer’s Note:** Readers interested in learning to identify tadpoles should check out an online guide (Altig et al., 1998) to North American species at: <http://eagle.cc.ukans.edu/~cnaar/CH/chis/1998/2/>. This guide includes keys to all North American species, and is the first reference to include color photographs of the tadpoles of most of them as well.

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- Altig, R., R. W. McDiarmid, K. A. Nichols, and P. C. Ustach. 1998. A key to the anuran tadpoles of the United States and Canada. Contemporary Herpetology Information Series (An Online Journal) Number 2.
- Duellman, W. E., and L. Trueb. 1986. Biology of amphibians. Second printing (1994), Johns Hopkins University Press, Baltimore and London.

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*Bull. Chicago Herp. Soc.* 36(4):82-84, 2001

## HerPET-POURRI

by Ellin Beltz

### Happy Year of the Snake

Chinese folklore reports that at the dawn of civilization, the Emperor of Heaven let all animals compete for the 12 spots on the zodiac. The snake made it. The creator of the universe in Chinese mythology, Pan Gu has the body of a snake and the head of a dragon. [*China Daily*, February 1, 2001, from P. L. Beltz]

### It’s a nice style and we’ll keep it

“A 150 million-year-old Chinese fossil site provides an extraordinary new window on the origin of one of the major groups of living amphibians. More than 500 fossils, many of which preserve the entire skeleton and impressions of soft tissues provide compelling evidence that the salamander originated in Asia according to a report in the March 29, 2001, issue of *Nature*. ‘All the major primitive salamander families are now known to be present in Asia,’ said Neil Shubin, professor and chairman of organismal biology and anatomy of the University of Chicago. ‘The simple, take-home, message is that there is an Asian origin for all salamanders. . . . The diversity of species in this find, combined with molecular data and study of characteristics from living salamanders, leads to the inescapable conclusion that almost all the major groups of salamanders evolved very early, and not much has been happening since.’” This discovery pushes back salamander origins 85 million years to the late Jurassic, about 150 million years ago. All life phases were found as were some soft tissue impressions and hundreds of other beautifully preserved fossils. One of the most interesting things they found was that neoteny was already a salamander life style. [from *HerpDigest*, Volume 1, Issue 33]

### Is this news?

“International drug syndicates are smuggling rare Australian reptiles out of the country for private overseas dealers, according to Environment Australia. Federal Government intelligence reports suggest smugglers bring in drugs and take out reptiles. In the past decade, the world trade in reptiles has increased to the level where about \$14 million worth of rep-

tiles are imported legally into the United States. The U.S. black market is believed to deal with more than \$1 billion worth of reptiles every year. Reptiles native only to Australia can be bought on the Internet from specialist shops throughout Europe and the U.S. [*Environment Australia*, March 2, 2001, from Raymond Hoser]

### Wayward croc known to Rom

After many years at the Madras Crocodile Bank, Rom Whitaker has taken a well-earned retirement to more private life. As the following shows, however, he and his family are certainly not out of the wildlife loop. “Thanks for your E-mail. . . . The croc [in the story] has attacked two women fatally besides 24 incidents of minor attacks. Nik went over a week ago to see if the culprit croc could be caught. The lake has a 14 km periphery and it’s a huge operation to conduct. So he’ll probably go over to do this in a short while after the State Government makes all the arrangements.”

### Does no one love the frogs?

The U.S. Fish and Wildlife Service has designated 4.1 million acres as “critical habitat for the California red-legged frog,” according to the *Los Angeles Times* [March 7, 2001, from Nicky Nolan]. Another 1.3 million acres originally to have been included were removed after protest from developers, agriculture, building industries, recreational users and private landowners. The red-legged frog is the inspiration for the “celebrated Calaveras County jumping frog” of the story of the same name by Mark Twain.

### It’s a toxic world we live in

The writer was interviewed at Sweetwater, Texas. Before that he wrote, “... among the relevant issues I would like to bring up is the use of gasoline sprayed into crevices and den sites. We have all talked about it being ‘illegal’ but I want to get the right information. I hope someone can help. Here in Texas I’ve gotten some information from the Texas Natural Resources Conservation Commission, and one of the things they faxed to me was a reporting standard whereby gasoline dis-



charged onto land is reportable when it is 210 gallons or more. I'm trying to check into whether this means it's OK to spray smaller quantities onto the land. Can anyone direct me to regulations or statutes, either in Texas or federally, that would govern (or presumably, prohibit) the practice of spraying gasoline to collect rattlesnakes? Much has been written about the damage to various wildlife and the spoiling of habitat that results from gasoline. I would have hoped some regulatory entity would determine that it poses a threat to such animals as the Texas indigo snake (when collectors are operating in south Texas) and other threatened and protected species. In my experience Texas Parks and Wildlife expresses concern but I'm not aware of any action being taken. Thanks in advance for any help that can be provided." Michael Smith <masmith51@earthlink.net> -- Editor / Secretary -- Dallas-Ft. Worth Herpetological Society <<http://www.kingsnake.com/dfwherp>> March 7, 2001

#### **Desert tortoise HCP on web**

Rep. James Hansen (R-UT) introduced H.R.880 a bill to provide for the acquisition of property in Washington County, Utah, for implementation of a desert tortoise habitat conservation plan. Learn more about the bill at <<http://thomas.loc.gov/cgi-bin/bdquery/z?d107:h.r.00880>>. [from James N. Stuart, Mining Habitat Specialist] For New Mexico wildlife info, visit Biota Information System of New Mexico (BISON-M): Species Accounts: <<http://151.199.74.229/states/nm.htm>> Searches: <<http://nmnhp.unm.edu/bisonm/BISONM.CFM>>

#### **Builders hope not to find bog turtles**

Builders of a corporate campus in Pennsylvania are searching for bog turtles on their site, prior to starting construction. No one knows if the turtle is still there, the last sighting was more than 30 years ago. Since the area was within possible range limits, the developer will have to hire a herpetologist to see if bog turtles are present on the site. Last year, a fiber optic cable company had to pay \$1.2 million for damages they caused related to 40 violations—all destruction of bog turtle habitat. [*Philadelphia Inquirer*, February 7, 2001, from new contributor Ned Gilmore]

#### **Herpes may be responsible**

Sick and dead sea turtles in Florida have been found which cannot blink their eyes or eat. All are adult females, but now are too weak to eat. They are being fed squid-shakes at the Turtle Hospital in the Keys. Blood work reveals that some turtles are infected with a strain of herpes virus. It's a nasty bug; it attacks the respiratory tract, the lungs and the trachea. One worker said, "Some of the ones coming in were reported dead. They looked so lethargic, [but] the only thing keeping them alive is pneumonia . . . causing foaming inside the lungs and that keeps the turtles buoyant. They are so weak they could never swim to the surface. They are actually just floating like they're dead. Every now and then they lift their heads slightly to breathe." [*Orlando Sentinel*, December 23, 2000, from Bill Burnett]

#### **An unenviable record**

North Carolina shattered a state record last year: 838 sea

turtles washed ashore dead or dying, eclipsing the previous high, set in 1999, of 605 strandings. In Virginia, 213 of these large, graceful reptiles became beached, an average number compared to reports in recent years. But like its neighbor, Virginia saw a rash of strandings in early spring, with 70 turtles in May alone floating helplessly to shore. Government experts attributed the phenomenon in part to a small group of commercial fishermen, most from Northeast states, who inadvertently trapped turtles in large-mesh nets aimed at monkfish, a popular, high-dollar ocean species. The National Marine Fisheries Service responded last May by imposing a 30-day ban on all gill netting from Cape Hatteras to the Virginia-Maryland border. Fishermen protested. But strandings subsided. Now, with the spring coastal fishing season about to begin, Virginia is proposing new regulations to curb turtle deaths. [*The Virginian-Pilot*, March 15, 2001, from Karen Furnweger]

#### **Check your vacation route**

"The town council of Virgin, Utah, has passed an 'ordinance outlawing the designation of endangered species within its borders' says the *Christian Science Monitor*. The desert town has also banned most environmentalists and prohibits the 'recognition of any wetlands locally' as well as making it a 'crime not to own a gun.'" [*GreenLines*, March 16, 2001]

#### **You win some**

"*Ensatina eschscholtzi*, . . . have settled around a geographic ring of varied habitats. UC Berkeley researcher David Wake found that these salamanders have adapted their forms and colors to different mountain habitats. . . . Seven different subspecies . . . range from San Diego and Los Angeles northward to the Monterey Bay region; then throughout the Bay Area and north from Santa Rosa into Oregon, east to Lassen Peak, then down along the Sierra Nevada to the Greenhorn Mountains east of Bakersfield. In the San Diego area, the original species, with shiny black body and mottled red legs, belly and tail, meets an even more vividly colored subspecies called *E. klauberi*, whose brilliant lemon-yellow body is striped in black from head to tail. Wake says that these changes are a clear example of 'incipient species formation.'" [*San Francisco Chronicle*, March 26, 2001, from *HerpDigest*, Volume 1, Issue 33]

#### **You lose some**

The University of New Orleans is maintaining a frozen zoo in hopes of maintaining breeding stock of fast vanishing species of plants and animals. Some estimates suggest that one animal species disappears each hour. [*GreenLines*, March 30, 2001]

#### **350 dead gators in Lake Griffith, so far**

The ongoing saga of dead and dying alligators in Florida's Lake Griffith continues. While researchers have found no direct link between *Cylindrospermopsis*, an exotic alga, and the die-offs, other workers have found odd lesions in dead alligators' brains, leading them to a horrid description for how the critters went. "The alligators can see and perhaps realize what is going on but can't make their muscles respond because the lesions are slowing the signals from the brain to the



limbs,” according to the Leesburg, Florida, *Daily Commercial* [December 26, 2000]. Other species affected include softshell turtles and long-nosed gar. A newspaper columnist in the *Orlando Sentinel* [January 7, 2001] wrote that the algae “first showed up in Lake Griffin, but now it’s everywhere, even the Winter Park chain of lakes. It’s as deadly as heroin. A mouse died after being injected with water from Lake Maitland. . . . It may be responsible for giving waterfront residents diarrhea, rashes and ulcers. . . . It has always been here, living in harmless numbers. . . . What we did was feed and nurture it. We turned lake water into liquid fertilizer with sewage and dirty runoff. We built dams to keep lakes filled . . . turning them into warm, stagnant pools. . . . Scientists in Australia have found that it spreads rapidly during droughts because this causes more water stagnation. . . . The future is not good. . . . This state is not known for getting the jump on problems. I don’t see any of these things happening until lakefront residents are gagging on algae fumes. By then, it may be too late to stop *Cylindrospermopsis*.” [both from Bill Burnett]

#### Galapagos News on the web

“You may not be aware that there is some dramatic new action going on in Galapagos on the illegal fishing front right now. The time of reckoning for the future of Galapagos may be close now. Information is posted at <<http://www.galapagos.to/>> and click on ‘Galapagos News.’ I’m leaving for Peru so unfortunately will not be able to follow what happens next. Thanks, as always, for your continued help and support, Tui De Roy (wildlife photographer).” March 19, 2001. [from Karen Furnweger]

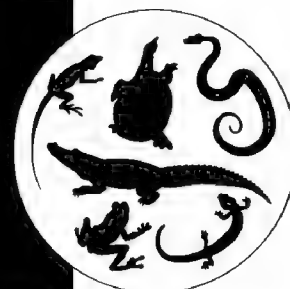
#### Need amphibian tapes?

Visit <<http://www.mpl-pwrc.usgs.gov/amphib/tools/tapes.html>> for a detailed table of recording contents and ordering information when available. [*HerpDigest*, Volume 1, Issue 33]

#### Plastic gecko grabbed

A drunken patron stumbling out of a bar in downtown Orlando grabbed one of that city’s decorated fiberglass lizard sculptures, fell and ripped it right off its base. Police suggested the man might have been looking for a “little lizard love,” according to the *Orlando Sentinel*. Unfortunately, his bear-hug will cost the lizard lover about \$3,800 to repair or restitute for the sculpture. Another lizard was swiped by lizard-nappers and a third is on display at Chicago’s Lincoln Park Zoo. [January 22, 2001, from Bill Burnett]

Thanks to everyone who contributed this month and to Bradford Norman, Raymond Hoser, Johnathon Maynard and others who sent things that I truly enjoyed reading, but couldn’t figure out how to summarize for this column. Please contribute. The file folder has gotten very skinny and it’s hard to write columns with no contributions. Send whole sheets of newspaper (it’s very light) to: Ellin Beltz, 1647 N. Clybourn Avenue, Chicago, IL 60614-5507. Thanks!



INTERNATIONAL HERPETOLOGICAL SYMPOSIUM

## International Herpetological Symposium

### 25th Anniversary Meeting

July 14-17, 2001 Hotel Pontchartrain  
Detroit, Michigan USA

Theme: Captive Propagation and Conservation Biology:  
Past, Present, and Future

Preliminary Speakers:

Peter Taylor, *Paleosuchus* Propagation  
Eugene Bessette, *The Dream* (Herpetoculture)  
Alan Botterman, *Dry Good Industry Perspective on Herpetoculture*  
Kelly Bradley, *Cuban False Chameleon Husbandry*  
Ed DeGraw, *Arboreal Alligator Lizards*  
David Fabius, *South American Snake-necked Turtles*  
Glen Gerber, *Caribbean Rock Iguana Research and Conservation*  
Dr. Barry Gold, *Exotic Snake Envenomation Problem and Treatment*  
David Grow, *Developing a New State-of-the-Art Herp Facility*  
Bob Myer, *American International Rattlesnake Museum*  
Charlie Painter, *Ecology of Crotalus willardi in the Southwest*  
Jim Pether, *Helmeted Geckos*  
Tony Pooley, *43 Years of Crocodile Farming*  
Louis Porras, *Rattlesnakes of the Colorado Plateau*  
David Roberts, *Herp Photography*  
Jay Savage, *Costa Rican Herpetofauna*  
Scott Stahl DVM, *Reptile Veterinary Medicine*  
Robert Wilkinson Ph.D., *Hellbenders, Past and Present*  
Tim Nias/Nathan Dunstan, *Inland Taipans, Oxyuranus microlepidotis*  
Robert Zappalorti, *Herping the Pine Barrens*

EVENTS: Banquet and Auction, Behind the scenes tour of the Detroit Zoo National Amphibian Conservation Center and the Holden Museum of Living Reptiles (dinner included), Herp Photo Contest with Prizes.

Registration fee of \$135, spouse \$65, is due on or before June 14, 2001; after June 14 - \$175, spouse \$85.

Send registration fee to:  
Joe Marek  
10411 Balsamwood Court  
Laurel, MD 20708-3176  
Phone: (410) 792-9840

General information:  
Stan Draper  
P.O. Box 16444  
Salt Lake City, UT 84116  
e-mail: [sdraper7@home.com](mailto:sdraper7@home.com)

Hotel reservations must be made directly with the hotel:  
(313) 965-0200 or (877) 965-0200.

Vendors contact:  
Ed Tunstall  
(602) 495-4388  
e-mail: [LCTRICFrog@aol.com](mailto:LCTRICFrog@aol.com)

Hotel rooms reservation rate if received by June 14, 2001:  
\$99/day Single, Double, Triple, or Quad.

For more information about the IHS and a printable Registration Form for the 25th Anniversary Meeting, please visit our website at [www.kingsnake.com/IHS](http://www.kingsnake.com/IHS).



### RATS AND MICE

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## Herpetology 2001

In this column the editorial staff presents short abstracts of herpetological articles we have found of interest. This is not an attempt to summarize all of the research papers being published; it is an attempt to increase the reader's awareness of what herpetologists have been doing and publishing. The editor assumes full responsibility for any errors or misleading statements.

### BLANDING'S AND WOOD TURTLE EXPLOITATION

J. P. Levell [2000, Chelonian Conservation and Biology 3(4): 665-674] reviews the role played by national and international live animal trade in the long-term decline evident in populations of wood turtles (*Clemmys insculpta*) and Blanding's turtles (*Emydoidea blandingii*). In the absence of reliable statistical data regarding actual number of specimens of either species traded annually, information on the extent of commercial trading activities over a period of 18 years was gathered from a variety of sources associated with the live reptile marketplace. Information resources utilized included the price lists of 54 commercial turtle dealers within the U.S., the display and classified advertisements contained in 808 issues (U.S. 748, Non-U.S. 60) of 19 different regional, national and international herpetological and/or animal trading periodicals (U.S. 11, Germany 2, Japan 2, United Kingdom 2, Canada and Spain 1 each), communications with various correspondents, and the author's personal exposure to a number of amphibian and reptile stores, swap meets and expositions. Significant differences were found in the overall "advertised" availability of each species, with *C. insculpta* consistently more prevalent than *E. blandingii* in all market areas surveyed. Summarized survey results included the following. U.S. Commercial Dealers in 1998 offering: *C. insculpta* 12 of 50 and *E. blandingii* 8 of 50. Total display and classified advertisements in U.S. periodicals 1983 to 1998: *C. insculpta* 79 and *E. blandingii* 31. Wood turtle availability was also substantially higher in non-U.S. live reptile markets. Countries advertising specimens of *C. insculpta* for sale included Germany, Japan and the UK. Commercial exploitation of *C. insculpta* outside the U.S. was most evident in Japan, where at least 5 commercial reptile dealers advertised the species for sale. In contrast, *E. blandingii* was included in only one "wanted" (no specimens offered for sale) ad among all sampled non-U.S. data resources. Other aspects relevant to the commercial exploitation of turtles, including historic and current live animal marketplace trends, prevailing sale prices, as well as the present and future roles of private captive breeding programs and government wildlife regulatory agencies in the long-term conservation of these and other chelonian species are also briefly examined.

### A FRESHWATER SEA SNAKE

A. R. Rasmussen et al. [2001, Herpetologica 57(1):23-32] describe a new species of the sea snake genus *Hydrophis* using external and internal morphological characters. The new species, *Hydrophis sibauensis*, was found more than 1000 km upriver from the coast in the River Sibau, an affluent of the River Kapuas, West Kalimantan, Indonesia. The authors compare the new species with its congeners and discuss various aspects of the biology. Whether *H. sibauensis* only lives in fresh water is not known, but it is the first time that a sea snake species has been found so far from the sea.

### BIOLOGY OF THE OLIVE SEA SNAKE

G. Burns and H. Heatwole [2000, Amphibia-Reptilia 21(3): 289-300] studied growth, sexual dimorphism and population biology of the olive sea snake, *Aipysurus laevis*, on the Great Barrier Reef of Australia. The authors findings indicate that *A. laevis* grows at a rate of 0.22–0.95 cm/month, with young animals growing faster than older ones. Males reach sexual maturity in their third year and females in their fourth or fifth year. There is sexual dimorphism in size, with females larger than males; at snout-vent lengths greater than 80 cm, females are heavier than males of equivalent length. Small snakes were uncommon. Apparent sex-ratio favors males in winter but moves toward equality or even a preponderance of females in summer, probably reflecting changes in reproductive behavior. Numbers of snakes are approximately 0.70–0.86 snakes per meter of reef edge. Olive sea snakes live to about 15 years or older.

### FENCE LIZARD TERRITORIAL BEHAVIOR

L. A. Sheldahl and E. P. Martins [2000, Herpetologica 56(4): 469-479] investigated the territorial behavior of the western fence lizard, *Sceloporus occidentalis*, by focusing on three questions: do individuals of *S. occidentalis* (1) exhibit site-fidelity, (2) defend the site with aggressive behavior, and (3) maintain exclusive use of the defended area? Spatial distributions and aggressive behavior were studied in two natural populations. The authors also used a small arena to observe aggressive behavior in paired interactions. Repeatability analysis revealed that individuals of *S. occidentalis* maintain home ranges of similar areas and in similar locations across years. While lizards use pushup displays to delimit territories that are approximately 61% of total home range area, overt aggression (e.g., chases, bites) was infrequent. Furthermore, lizards maintained exclusive use of only a small proportion of their defended areas. Results are discussed in the context of what it means to be "territorial."

### SCIENTIFIC NAME FOR RUSSELL'S VIPER

K. Adler et al. [2000, Hamadryad 25(2):83-85] point out that for over 100 years, Russell's viper of south and southeast Asia has been known scientifically as *Vipera* (or *Daboia*) *russellii*. The name was first introduced in 1797 as *russelii*, after Patrick Russell, but was corrected in 1849 to correspond to the actual spelling of Russell's name. However, due to the conventions of Classical Latin, Russell is correctly latinized to the nominative *russelius* and, thus, to the genitive case as *russelii*. As a result, a petition to the International Commission on Zoological Nomenclature to conform the name to Russell's own spelling would probably not be successful. The authors point out that this leaves us with the awkward but irremediable situation in which the common (Russell's viper) and scientific (*Daboia russelii*) names do not agree.



## Unofficial Minutes of the CHS Board Meeting, March 16, 2001

The meeting was called to order at 7:37 P.M. Board members Rich Crowley, Linda Malawy, Mike Redmer and Jenny Vollman were absent.

### Officers' Reports

Recording Secretary: Emily Forcade distributed and read the minutes from the February board meeting. Corrections were made and the minutes were approved.

Treasurer: Greg Brim distributed the treasurer's report. Amazon.com earnings are still zero this year because these are reported quarterly. Several board members mentioned that they had made purchases through the CHS website. Mike Dloogatch suggested we keep track of the earnings reported to see if they are roughly consistent with what members know they have purchased. A suggestion was made to post the treasurer's reports and minutes on the website. Mike thought that posting the *Bulletin* version of the minutes would be reasonable.

Membership Secretary: Membership rose by one this month (to 797). Mike Dloogatch will be preparing new membership applications. These will include space for E-mail address. Mike asked for suggestions for other changes to the form.

Vice-President: In April, Dr. Peter Pritchard will discuss giant softshell turtles of Southeast Asia. The June meeting will be the annual "Show and Tell." In July Dr. Martin Wikelski will discuss physical changes in Galapagos marine iguanas (*Amblyrhynchus cristatus*) due to El Niño. There is nothing new about rattlesnake roundups. The Utila Island Iguana Project is going full steam. There will be related items to sell at ReptileFest to raise funds for the project. There will also be information on posters.

Corresponding Secretary: The Public Relations Committee will begin its work on the weekend of April 7–8. This is the Chicago Wilderness Members' Weekend at the Field Museum. The CHS will have a display. Steve Spitzer said he received several large posters from the Illinois Department of Public Health that contain the health warning regarding reptiles that pet stores will be required to post. These will be displayed at the 'Fest. Steve also reported on adoptions: there are eight iguanas available and four snakes, including an albino Burmese python and two boa constrictors.

Publications Secretary: Jack reported for Mike Redmer. Mike is working on website improvement.

### Standing Committees

Grants: Mike Dloogatch said we have received two applications. The deadline is the end of March.

Shows: No one has stepped forward to represent the CHS at the Park Forest Earth Day celebration. For the Chicago Wilderness Members' Weekend at the Field Museum, there will be a non-live display. Jenny Vollman will set it up and Jeff Janovetz will pick it up after the exhibit. Jenny, Lori King and Gary Fogel will work on this.

ReptileFest: Darin Croft said that things are going smoothly. Bill Bavirsha needs to coordinate the activities of the electrician. Press packets have been sent to the *Chicago Tribune*, the northwest Indiana *Post Tribune*, and the *Daily Herald*. We have purchased ads in the weekend activities sections of the *Chicago Tribune* and the *Chicago Sun-Times*. Lori King and Darin will be on WGN radio tomorrow night. Don Wheeler will be making some large signs. Ron Humbert reported to Darin that we have a similar amount of exhibitors signed up as we had last year at this time. Greg Brim said he'd heard feedback about the better venue. The participation of other herp societies could be slim. The traveling distance can be difficult for them. The Biology Colloquium at UIC and U of C friends of Lisa Yerian will be available to assist in the setup. Karen Bielski has the tablecloths and is getting a discount on the pizza. The only part of the contract not signed relates to the electrical work. Lori suggested that nothing be done with the vendors' tables since they prefer to set these up themselves. Char suggested placing the folded tablecloths for them on the tables.

Library: Librarian Jeff Janovetz will be bringing a list to the monthly meetings. Gary Fogel is storing a library cart he can no longer keep. There was some discussion about how many we need, since we have two. The group was agreeable to Jack trying to sell the second cart.

### Ad Hoc Committees

CAS: Jack Schoenfelder reported that there is a major reorganization being planned for the nature museum. There is a plan to convert the auditorium into exhibit space. The McCormick Room was raised as a possibility, if light can be blocked and AV equipment can be made available. Char wondered if we could rent a meeting room at a hotel. Jack and Mike wanted an affiliation with a scientific or educational institution. Mike mentioned that one difficulty was that colleges would give priority to their own events. Jack said that some colleges have lecture halls that could work. The Hoosier Herp Society meets at a university and knows that of three lecture halls, one of them will always be available to them. Mike said that we've looked at Northeastern University, North Park College, and Triton College. Emily Forcade asked about the offer by the CAS of free space at one of their buildings. Mike said that space would just accommodate a group the size of the board. He said the trend of museums is to use space as a business. Jack said Erin would contact him in two weeks to see what the plan for the conversion will be. The room is scheduled for us through April.

Nominating: Jack said that this committee should get underway after the 'Fest. He would like suggestions for members. He reminded the group that the chairperson needed to be a non-board member.

Trips: Char Haguewood said the Toledo Zoo trip remains scheduled for May 19. The cost will be \$35/person. Someone wondered if we could have a South Side stop. Char said this would work but she would need to have an exact place.



## Old Business

Chicago Wilderness: Char Haguewood and Tom Anton will be representatives to CW. Char said she noticed in a publication from Morton Arboretum a small box that included a phrase supporting CW. She wondered if we could do something similar on our website or in the *Bulletin*. Mike said this was possible.

Frog Calls: Lang Elliot was unable to produce the tape in time for this year's count. He will be able to provide the identified frog sounds this year and the completed tape in time for next year's count.

Retreat: Several people can't come at the suggested June weekend. We will be looking at other possible dates.

## New Business

Greg Brim moved that we donate \$75 to LaRabida Children's Hospital in honor of Mike Dloogatch's father, Sam, who recently passed away. Mr. Dloogatch was active in supporting this facility. Char Haguewood seconded. Mike Dloogatch abstained from voting. The rest of the group unanimously supported the contribution.

Steve Spitzer has been picnic chairman for the last few years and wishes to give up this position; this year the Turtle Club has already chosen a site in a grove for their picnic. Steve wondered if we might like to select an area for a gathering that would provide the possibility of some nature walks. Jack will bring this up at a general meeting and see if anyone would like to volunteer to be picnic chairman. A picnic at, for example, Volo Bog or Moraine Valley would be interesting sites.

## Ideas and Suggestions

Regarding membership recruitment, Char suggested putting a "Referred by" space on the membership application. Mike agreed. Lori said she has some wonderful original artist plates and woodcuts that could be awarded to people who recruit new members.

The PR committee might be working to get pet shops to include a poster invitation to our general meeting.

## Round Table

Greg Brim recently visited Foyles bookstore in London, which has an extraordinary selection of herp-related books. They have a website.

Char will be out of town during the April general meeting. She asked for a volunteer to take registrations for the field trip. Will Forcade volunteered.

Darin said a new exhibit called "Kinetosaurs" is at the Field Museum. He will be talking about it Monday morning at 7:40 and 8:40 A.M. on WGN-TV.

Mike Dloogatch responded to a request to have the board meeting announced in every *Bulletin*. He said he would be happy to have such an announcement in the *Bulletin* if someone will volunteer to write up the announcement each month.

Will Forcade said that Kids Radio Disney Station would be stopping at Old Orchard Mall in the next month. He suggested this as a possible place for the CHS to make itself known.

The meeting adjourned at 9:07 P.M.

*Respectfully submitted by Recording Secretary Emily Forcade*



**Thank you!**  
**To everyone who helped make**  
**ReptileFest 2001**  
**the biggest and best one ever!**

- Approximately 2,750 paying visitors — the largest number ever!
- Lots of press coverage including the Tribune, Sun-Times, Fox, NBC and WGN Radio
- 50 exhibitors — up 10% from last year
- 25,000 square feet of exhibition space — more than twice the size of previous 'Fests

-- Help us make next year's even better --

**ReptileFest 2002: March 23–24, UIC P.E. Building**

Contact Darin Croft at (773) 288-8851 or [dcroft@fmnh.org](mailto:dcroft@fmnh.org) for more information



## Advertisements

For sale: Frozen rodents now available at the General Meeting! Just another good reason to come to the meetings at the Chicago Academy of Sciences Patty Notebaert Nature Museum. Assorted sizes of rats and mice. Call Rich Crowley at (708) 485-5705 for details and pricing.

For sale: rats and mice — pinkies, fuzzies and adults. Quantity discounts. Please send a SASE for pricelist or call Bill Brant, *THE GOURMET RODENT*, 6115 SW 137th Avenue, Archer FL 32618, (352) 495-9024, E-mail: [GrmtRodent@aol.com](mailto:GrmtRodent@aol.com).

For sale: murine-pathogen-free rats and mice available in all sizes, live or frozen: pinkies, fuzzies, crawlers, small, medium and large. Frozen crawler mice in lots of 2000, \$.17 each. Also available, full grown hairless mice. FOB shipping point. Master Card accepted. Call (518) 537-2000 between 8:00 A.M. and 5:00 P.M. or write SAS Corporation, 273 Hover Avenue, Germantown NY 12526 for prices and additional information.

For sale: from **The Mouse Factory**, producing superior quality, frozen feeder mice and rats. We feed our colony a nutritionally balanced diet of rodent chow, formulated especially for us, and four types of natural whole grains and seeds. Mice starting from: pinks, \$.17 each; fuzzies, \$.24 each; hoppers, \$.30 each; weanling, \$.42; adult, \$.48. Rats: starting with pinks at \$.45 each, to XL at \$1.80 each. Discount prices available. We accept Visa, MC, Discover or money orders. P.O. Box 85, Alpine TX 79831. Call us **toll-free** at (800) 720-0076 or visit our website: <http://www.themousefactory.com>.

For sale: from Bayou Rodents, excellent quality feeder mice and rats. Every size available. Pinks starting at \$20/100. Orders are shipped by overnight service Monday thru Thursday. We accept Visa, MasterCard and Discover. For more info, contact Rhonda or Peggy, (800) 722-6102.

For sale: **high quality frozen feeders**. Over a decade of production and supply. Seven sizes of mice available: small newborn pinks up to jumbo adults. Prices start at \$25 per 100. Feeders are separate in the resealable bag, not frozen together. Low shipping rates. Free price list. Kelly Haller, 4236 SE 25th Street, Topeka KS 66605, (913) 234-3358 evenings and weekends.

For sale: For Berwyn pick-up only. 300 pinkie/chubby mice (double wrapped, frozen solid), \$25/100 or \$60 for all 300. I overbred and don't want them to go to waste. Janice, (312) 641-4708. Leave a message. I will call back.

For sale: Two 20-gallon aquariums in excellent condition. These sell new for \$30 each at PetSmart. Northeastern Illinois or southeastern Wisconsin. Best offer. The money will go to the "Critter Corral" (an animal rescue organization). Please call (847) 331-0949 and ask for Julie.

For sale: herp books. *Amphibians and Reptiles of Western North America* by Robert Stebbins, 1954 (3rd printing), 536 pp., range maps, drawings, no DJ, \$65; *A Contribution to the Herpetology of Florida* by Archie Carr, Jr., 1940, 118 pp., hardbound, title and author's name lettered in ink on spine, former owner's name on card glued inside front cover, front endpaper slightly torn, \$50; *Das Neue Schlangenbuch in Farbe* by Fred Kundert, 1984, 196 excellent color photos of snakes with minimal text, in German, DJ, \$70; *Handbook of Common New Guinea Frogs* by J. I. Menzies, 1976, 75 pp., 12 color plates, plastic boards, \$27; *The Book of Indian Reptiles* by J. C. Daniel, 1983, 141 pp., many color and b & w photos, drawings, DJ, \$30. All books in excellent condition unless otherwise noted. Prices postpaid. William R. Turner, 7395 S. Downing Circle W., Littleton, CO 80122, (303) 795-5128; E-mail: [turnerbmrk@prodigy.net](mailto:turnerbmrk@prodigy.net).

For sale: two pairs of proven breeder bearded dragons; one young adult pair of anerythristic Kenyan sand boas; one adult female melanistic javelin sand boa. Scott, (309) 833-1849. [Macomb IL]

For sale: c.b. emerald tree boas, beautiful red babies born 12/00, \$500 each; c.b. green tree pythons from four different bloodlines, \$400 and up. 2001 projects: pure diamond pythons, Amazon Basin emerald tree boas, annulated tree boas, and Madagascar tree boas. All required documents available. Any questions, please call Al Loague, days (708) 692-4814 or evenings (630) 293-9796.

For sale: four male and four female c.b. third generation green anacondas, tame, eating rats or rabbits, 4', \$300 each; three male and three female African rock pythons, c.b., tame, 2', \$100 each; four male and four female c.b. yellow-headed reticulated pythons, tame, 4', \$250 each. Coming soon: St. Lucia Island boas; Texas indigos; Florida indigos; Peruvian rainbows; green tree pythons from blue females; *Spilotes*; Blanding's, Gulf hammock box, wood and spotted turtles [permit required in IL]. Frozen baby rabbits — pinkies, \$3 each, fuzzies, \$3.50 each, small, \$5 each. Captive Born Reptiles, 2500 Morse Road, Columbus OH 43231, (614) 337-8071. E-mail: [CaptiveBornReptiles1@prodigy.net](mailto:CaptiveBornReptiles1@prodigy.net)

For sale: 2001 potential offspring; we have eggs and/or gravid females for the following species — hi-orange western womas; pastel hypo pyros; yellow anacondas; Argentine boas; Dumeril's boas; Brazilian rainbow boas; Amazon tree boas; apricot Pueblan milks. Babies due April through August. Call or E-mail for prices and availability. Mark Petros, Strictly Serpents, (847) 854-3259, E-mail: [MLPserpents@hotmail.com](mailto:MLPserpents@hotmail.com).

For sale: Send SASE to CRC, P.O. Box 0731, Las Vegas NV 89125-0731 for brochures and list of species available. Limited bookings available for guided tours of herpetological collection sites in Nevada. Call/fax (702) 450-0065. URL <http://www.herp.com/crc/> E-mail: [crsafetie@aol.com](mailto:crsafetie@aol.com).

Tours: Adventure tours to Madagascar! Join **Bill Love** seeing and photographing fauna and flora, heavily herp-biased, across the world's least known mini-continent. Maximum fun & photo ops assured on every trip. Contact him at: BLUE CHAMELEON VENTURES, P.O. Box 643, Alva FL 33920. TEL: (941) 728-2390, FAX: (941) 728-3276, E-mail: [blove@cyberstreet.com](mailto:blove@cyberstreet.com).

Tours: **Road-riding in Costa Rica!** Treat yourself to the trip of a lifetime! Learn about tropical herps, find them, photograph them, see where they live. **Greentracks, Inc.**, offers the best herpetological tours led by internationally acclaimed herpetologists and herpetoculturists. See the Amazon, visit cloud forests, experience the world's greatest rainforest, super sunsets and good company. Call (800) 9-MONKEY.

Wanted: **Shed skins** for study dealing with melanin deposition/pattern retention in sheds. If you come across any sheds while herping this field season, please collect them and send them to me at the address below. It is recommended that you collect sheds throughout the field season and send multiple sheds towards the end of the field season (October). Please include the county and state where the sheds were collected and your name and address (contributors will be acknowledged in a future publication). Field collected sheds only please. Brian S. Gray, 1217 Clifton Drive, Erie PA 16505.

Wanted: west Florida reptile collector would like to hear from other reptile collectors from all parts of the U.S. to trade, buy, sell reptiles of all types. Tony Picheo, 11080 lillian Hiway, Pensacola FL 32506, (850) 453-8133.

Wanted: big-headed turtles; mata mata turtles; Mexican giant mud turtles (*Staurotypus triporcatus*); exceptionally large common snappers (45 lbs. & up); large alligator snappers (over 90 lbs.); spectacled caiman from Trinidad, Tobago and Surinam; dwarf caiman; smooth-fronted caiman; albino turtles (except red-eared sliders). Walt Loose, (610) 926-6028, 9:00 A.M. — 1:00 P.M. or after 11:30 P.M. Eastern Time.

Line ads in this publication are run free for CHS members — \$2 per line for nonmembers. Any ad may be refused at the discretion of the Editor. Submit ads to: Michael Dloogatch, 6048 N. Lawndale Avenue, Chicago IL 60659, (773) 588-0728 evening telephone, (312) 782-2868 fax, E-mail: [<MADadder0@aol.com>](mailto:MADadder0@aol.com).



## UPCOMING MEETINGS

The next meeting of the Chicago Herpetological Society will be held at 7:30 P.M., Wednesday, April 25, at the Peggy Notebaert Nature Museum, Cannon Drive and Fullerton Parkway, in Chicago. **Dr. Peter C. H. Pritchard**, renowned turtle expert and author, will speak on "The Search for the World's Largest Freshwater Turtle." Dr. Pritchard is a wonderful speaker and the topic is a fascinating one, so don't miss this meeting.

As of this writing the program for the May 30 meeting had yet to be determined.

The regular monthly meetings of the Chicago Herpetological Society now take place at Chicago's newest museum — the **Peggy Notebaert Nature Museum**. This beautiful new building is at Fullerton Parkway and Cannon Drive, directly across Fullerton from the Lincoln Park Zoo. Meetings are held the last Wednesday of each month, from 7:30 P.M. through 9:30 P.M. Parking is free on Cannon Drive. A plethora of CTA buses stop nearby.

### The Chicago Turtle Club

The next meeting of the Chicago Turtle Club will be Sunday, April 29, 1:00 – 3:30 P.M., at the North Park Village Nature Center, 5801 N. Pulaski, in Chicago. Meetings are informal; questions, children and animals are welcome. Parking is free. For more info call Lisa Koester, (773) 508-0034, or visit the CTC website: <http://www.geocities.com/~chicagoturtle>.

## DONATIONS TO THE FEBRUARY 28 RAFFLE

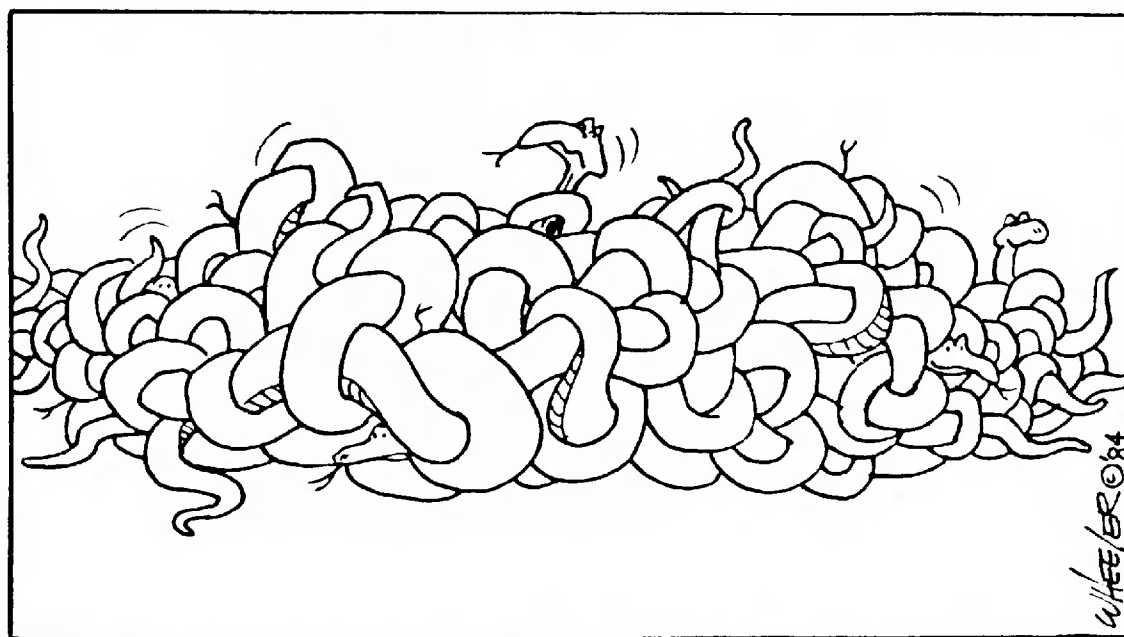
The following is a listing of those businesses and individuals who generously donated items for our monthly raffle at the February 28 meeting. The donated items are shown in parentheses.

**Fancy Publications** (*Reptiles* subscription); **Hagen** (Ornamentalls cage decor / Heat Wave heat mat); **Fauna** (*Fauna* magazine); **Timberline** (mealworm bedding); **Super Pet** (Hanging Gardens cage decor / rock pool cover / Little Critter enclosure / Island Sanctuary); **ZooMed** (basking light); **Karl & Erik Graff** (Avitron supplement); **Bob & Ari Herman** (custom CHS T-shirt); **Lori King** (herp light switch covers / herp toy / raptor bubblegum); **Charlotte Henkle** (light & fixture / ceramic dish / hide log / timer switch); **Dr. Cheryl Roge-Best Friends Animal Hospital** (terrarium background); **Marcia Rybak** (dinosaur coloring mat / dinosaur computer paper & mouse pad); **Ilene Sievert** (potted plants); **CHS** (T-shirt).

## CHS MEMBERSHIP LIST AVAILABLE TO ALL MEMBERS UPON REQUEST

A listing of names and addresses of all members of the Chicago Herpetological Society, current as of August 2000, is available to members free of charge upon request. Send your request to Chicago Herpetological Society, 2060 N. Clark Street, Chicago IL 60614, or you may E-mail your request to Joan Moore at [Joan.Moore@worldnet.att.net](mailto:Joan.Moore@worldnet.att.net).

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